THE

AMERICAN JOURNAL OF PHARMACY.

OCTOBER, 1874.

THE TWENTY-SECOND ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The meeting was held at Liederkranz Hall, Market near Second street, in the city of Louisville, Ky.; it opened on Tuesday afternoon, September 8th, and adjourned about noon on Friday, September 11th. Both the meeting and exhibition room, the latter being the lower concert room of the Hall, were very convenient and well adapted for the purposes of the meeting.

First Session—Tuesday Afternoon.

At the appointed time, President John F. Hancock, of Baltimore, called the meeting to order, and finding all the members of the Executive Committee absent, except the Secretary, appointed Mr. George W. Kennedy, of Pottsville, Pa., to act for this Committee. A Committee on Credentials was appointed, consisting of Messrs. Paul Balluff, of New York, Jos. Roberts of Baltimore, and Wm. Saunders, of London, Canada; the following Societies were reported to be duly represented by delegates: the Massachusetts, New York, Philadelphia, Maryland, National (of Washington, D. C.), Cincinnati, Louisville, Tennessee, Chicago, and Ontario Colleges of Pharmacy; the New Hampshire, New Jersey, Newark, Washington, Richmond, Lexington, St. Clair, and Indianapolis Pharmaceutical Associations, the Literary and Scientific Society of the German Apothecaries of New York, and the Alumni Associations of the Massachusetts, New York and Philadelphia Colleges of Pharmacy. The credentials of the delegation of the St. Louis College of Pharmacy, and of the Alumni Association of the Cincinnati College, were received at a

subsequent session; none of the accredited delegates of the Newark Pharmaceutical Association were present.

A communication was read from Mr. E. A. Maginness, Secretary and Superintendant of the Louisville Industrial Exposition, inviting the members to visit the exposition free of charge, admission to be gained upon showing their badges. The invitation was accepted with thanks, and the Secretary directed to properly acknowledge the same.

Invitations to take seats on the floor were extended to Professor J. Lawrence Smith, the professors of the Medical Colleges and the Louisville College of Pharmacy, and the medical profession of Louisville and vicinity.

At the first call of the roll, 60 members answered to their names. The Executive Committee reported the names of 68 applicants for membership, who were duly elected, Messrs. R. V. Mattison and G. E. Cook acting as tellers.

Committee reports being called for, the following were handed in: Report of the Executive Committee with the report of the Permanent Secretary, of the Committees on the Drug Market, on Papers and Queries, on Unofficinal Formulas, on Adulterations and Sophistications, on Legislation and on Photographic Album.

The delegations of the Colleges and Societies named above, appointed each one of their number to serve on the Committee to Nominate Officers for the ensuing year, as follows: S. M. Colcord, M. L. M. Peixotto, W. H. Pile, J. F. Moore, J. A. Milburn, J. D. Wells, E. Scheffer, B. Lillard, A. E. Ebert, Wm. Saunders, C. A. Tufts, J. Fehr, W. P. Baldus, J. W. Blunt, J. J. Frost, A. G. F. Streit, G. W. Sloan, Ch. Eimer, C. P. Orne, Wm. Wright, Jr., and G. W. Kennedy. The Nominating Committee was completed by the chair appointing in addition the following members from the Association at large: Messrs. W. F. Nick, Erie, Pa.; A. S. Lane, Rochester, N. Y.; C. A Heinitsh, Lancaster, Pa.; A. S. White, Mount Holly, N. J.; and Gust. Mallinckrodt, St. Louis, Mo.

The reports of the Executive Committee and of the Permanent Secretary were read, the former of which recorded the decease during the past year of the following members: Professor Wm. Procter, Jr., Charles Ellis, H. K. Bowman, and Robert Platzer of Philadelphia; N. C. Pettis of North Adams, Mass.; J. C. R. Fulton, of Brooklyn; Michael S. McConville, of Worcester, Mass.; John Scott, of Cincinnati; Chas. P. Johnston and Chas. F. Uhl, of Memphis, Tenn.;

Jas. F. Aspinwall, of New York; Fred. A. Keffer, of New Orleans, and Darius B. Kidder, of Boston.

The Permanent Secretary reported that the action of the Association at the Richmond meeting, aiming at a uniformity in unofficinal elixirs, had been received with almost universal favor. Under date of July 13, an invitation was extended, in compliance with resolutions passed at St. Louis, to the Fourth International Pharmaceutical Congress, held at St. Petersburg, Russia, August 13th to 18th, to call the meeting of the Fifth Congress in Philadelphia in 1876, or if this should be deemed inexpedient, the invitation was extended to all Societies represented at St. Petersburg, and to all pharmacists to meet the American Pharmaceutical Association at its 24th annual meeting, to be held in Philadelphia during the International Industrial Exposition in 1876. Attention was also drawn to the questions that were to come up for discussion at St. Petersburg (see *Amer. Jour. Pharm.*, 1874, April, p. 205) and it was urged that this Association participate in the preparation of an International Pharmacopœia, should the Congress create an International Commission with this project in view. It was likewise proposed, that whenever possible, the likeness of one or more of the deceased members should be published with the Proceedings. The incidental expenses of the Secretary during the past year, exclusive of traveling expenses and journals for the use of the Reporter on the Progress of Pharmacy were $352.46, the principal items being for porterage and freight $133.10; postage stamps, $153; packing boxes, etc., $27.60; circulars, $17.50, and fire insurance, $17.50.

The following committee was appointed to examine and report on the specimens on exhibition: James T. King, Middletown, N. Y.; T. N. Jamieson, Chicago; A. R. Bayley, Cambridgeport, Mass.; Clay W. Holmes, Wilkesbarre, Pa., and Vincent Davis, Louisville.

President Hancock read the Annual Address, a very valuable document, which was attentively listened to, and, together with the Secretary's report, referred to a committee of three, to report on such portions of the two documents requiring the action of the Association. The committee consisted of Messrs. J. F. Moore, William Neergaard and A. W. Miller. A unanimous vote of thanks was tendered to the President for his able address, after which the Association adjourned until 9 o'clock the following morning.

Second Session—Wednesday Morning.

The reading and approval of the minutes of the first session was followed by the report of the Nominating Committee. The following officers and standing committees were nominated for the ensuing year:

President, C. Lewis Diehl, of Louisville, Ky.

Vice-Presidents, Joseph Roberts, of Baltimore.
William T. Wenzell, of San Francisco.
Augustus R. Bayley, of Cambridgeport, Mass.

Treasurer, Charles A. Tufts, of Dover, New Hampshire.

Permanent Secretary, John M. Maisch, of Philadelphia.

Reporter on Progress of Pharmacy, C. L. Diehl.

Executive Committee, Geo. W. Kennedy, of Pottsville, Pa., *Chairman;* William McIntyre, Philadelphia, Pa.; J. L. Lemberger, Lebanon, Pa.; Charles A. Heinitsh, Lancaster, Pa.

Committee on Drug Market, William Wright, Jr., New York; John Muth, Baltimore; Emil Scheffer, Louisville; William F. Horton, Boston; John Calvert, San Francisco.

Committee on Papers and Queries, William Saunders, London, Ontario; John F. Judge, Cincinnati; W. S. Thompson, Washington, D. C.

Business Committee, E. H. Sargent, Chicago; T. Roberts Baker, Richmond, Va.; William H. Egle, Harrisburg, Pa.

The Committee also brought in nominations for the following special committees:

Committee on Adulteration and Sophistication, Adolph W. Miller, *Chairman*, Philadelphia, Pa.; M. L. M. Peixotto, New York; J. R Mercein, Jersey City.

Committee on Legislation, John M. Maisch, Philadelphia; T. L. A. Greve, Cincinnati; G. J. Luhn, Charleston, S. C.; A. G. F. Streit, Belleville, Ill.; S. S. Garrigues, East Saginaw, Mich.

Committee on Liquor Dealers' License of Apothecaries, F. Hassencamp, Baltimore; W. T. Baldus, Washington, D. C.; John Colgan, Louisville; E. C. Jones, Philadelphia; J. S. Robinson, Memphis.

Committee on Infringement of Stamp Tax, Oscar Oldberg, Washington, D. C., *Chairman;* J. Faris Moore, Baltimore; Herman Vogelbach, Philadelphia, Pa.

Committee on Photographic Album, P. W. Bedford, New York, *Chairman;* J. S. Kirkbride, St. Louis; John A. Milburn, Washing-

ton, D. C.; George H. Schaefer, Fort Madison, Iowa; Benjamin Lillard, Nashville, Tenn.

Committee on Ebert Prize, Charles Bullock, *Chairman;* Wilson H. Pile, John M. Maisch, Philadelphia.

The Nominating Committee likewise reported the completion of the Permanent Committee on the Pharmacopœia, as follows:

George F. H. Markoe, Boston; P. Wendover Bedford, New York; Alfred B. Taylor, Philadelphia; J. Faris Moore, Baltimore; Albert E. Ebert, Chicago; William H. Crawford, St. Louis; J. C. Wharton, Nashville; C. Lewis Diehl, Louisville; William S. Thompson, Washington, D. C.; John F. Judge, Cincinnati; C. H. Dalrymple, Morristown, N. J.; Charles A. Tufts, Dover, N. H.; William Saunders, London, Ontario; Paul Balluff, New York.

The report was, on motion, accepted, and the President directed to cast an affirmative ballot in favor of the nominees, Messrs. W. S. Thompson and J. A. Webb acting as tellers. Professor C. L. Diehl, the newly-elected President, was conducted to the chair by Messrs. W. J. M. Gordon and J. F. Moore, and, before taking his seat, made a few remarks, expressive of his thanks for the honor conferred upon him. The Association passed a vote of thanks to the retiring President and officers for the able manner in which they had discharged their duties.

Mr. F. H. Butler, of Lowell, Mass., was elected a member, after which the Treasurer read his report, showing that, at the beginning of the meeting, there had been in the Treasurer's hands the sum of $918.22. The report was accepted, and, together with the Treasurer's books, referred to an Auditing Committee, consisting of Messrs. P. Balluff, of New York; G. H. Cary, of Louisville, and G. W. Sloan, of Indianapolis. The committee reported, at a subsequent session, that the accounts had been found correct, and the Treasurer's books were neatly and accurately kept.

The report of the Committee on the Drug Market was read by the Chairman, Prof. P. W. Bedford, and referred for publication.

The Secretary read the report of the Committee on Adulterations and Sophistications; in it, the Chairman, Mr. Charles Rice, of New York, suggests to aim at the establishment of a central bureau for the detection of adulterations, in order to secure to our people some of the benefits which England derives from its "Adulteration Act." The plan proposed for the present is that the committee should espec-

ially direct their attention to some prominent staple articles, obtaining samples through confidential and discreet agents from each State, and carefully examining or analyzing such samples, and preserving them with the view of establishing a museum, having all the facilities and appliances for conducting the necessary experiments. At present, the labors of the committee are mainly limited to a recapitulation of adulterations reported in the journals, and to the examination of such specimens which they may accidentally encounter.

The report of the Committee on Legislation, read by the Chairman, J. M. Maisch, informed of the efforts made in several States to legally regulate the practice of pharmacy. Such laws were passed in the States of Kentucky and Missouri, and recently revived in Alabama and Georgia; the report also referred to some United States and State laws, more or less affecting the business of the pharmacist and druggist.

Dr. J. M. Woodworth, Supervising Surgeon of the U. S. Marine Hospital Service, sent, as a present to the Association, one copy each of the "Annual Report of the Supervising Surgeon, for the Fiscal Year 1873," and "Nomenclature of Diseases." The works were accepted with thanks.

The American Pork Packers' and Produce Dealers' Association, meeting in Louisville simultaneously with the Pharmaceutical Association, on motion of the Business Committee, an invitation was extended to the former to visit the exposition of specimens and objects of pharmaceutical interest. This invitation was accepted, and on the following day the invited Association in a body visited the spacious exhibition hall, and was evidently much pleased with the tasteful display and the numerous articles of interest to the people at large.

The following papers were read: On American extract of licorice, by Dr. A. W. Miller; On oleate of mercury, by Ch. Rice; On extract of quassia, by J. S. Whall, and On suppositories, by G. W. Kennedy. The latter paper occasioned considerable discussion, in which many members participated, relating their experience with the making of suppositories by hand and by moulds. It appears that many pharmacists discard the use of the moulds altogether, while others obtain these preparations equally uniform in composition by using moulds, which have the additional advantage of imparting a better finish to the suppositories, and of a considerable saving of time when larger quantities are made.

The Association then adjourned into the exhibition hall, where, in charge of the Committee on Specimens, the various articles of preparations, drugs, plants, apparatus, &c., were thoroughly examined and their merits discussed in an informal manner; after which an adjournment was had until 3 o'clock P. M.

Third Session—Wednesday Afternoon.

This session was mainly devoted to the reading and discussion of essays in answer to the queries propounded at the Richmond meeting. The essays, of which we propose to give short abstracts in a future number, were on the following subjects: On hypodermic solutions of quinia, by A. P. Sharp, of Baltimore; On the medicinal value of rhubarb after exhaustion with water, by C. A. Heinitsh, of Lancaster, Pa.; On the active constituents of bitter orange-peel, by Prof. R. H. Stabler, of Alexandria, Va.; On cosmolin, by Jos. L. Lemberger, of Lebanon, Pa.; On dilute phosphoric acid, prepared from the glacial acid, by Louis Dohme, of Baltimore; On the preference shown to graduates in pharmacy, as compared with non-graduates, by P. Balluff, of New York; On the salaries of drug clerks, by H. N. Rittenhouse, of Philadelphia; On statistics of the drug trade, by B. F. Stacey, of Charlestown, Mass.; On commercial iron by hydrogen, by J. L. A. Creuse, of New York; On the purity of commercial santonin, by Dr. Fr. Hoffmann, of New York.

The discussion was somewhat animated on the subject of cosmolin while its value as a therapeutical agent for external use, and as a substitute for fats in ointments, was acknowledged, it was stated that it must be regarded as a mixture of paraffins of low fusing point, and that it may be produced from the so-called paraffin oils, the residue of petroleum distillations, by the process, or a modification of it, as suggested by Dr. A. W. Miller (see *Amer. Journ. Pharm.*, 1874, Jan., p. 3, 4), in which case it can be cheaply obtained by the pharmacist.

Santonin, though usually pure, was stated to have been met with in the Western markets adulterated with a considerable portion of boric acid.

For the conversion of glacial into the dilute tribasic phosphoric acid, the employment of nitric acid does not appear to be essential, a certain degree of heat affecting the change. Mr. Dohme will continue his researches on this subject.

The Committee on the President's Address and the Secretary's

Report made a report, which was accepted and made the order of business immediately after the opening of the fourth session.

After some remarks by Mr. J. F. Hancock on prescription vials, the Association adjourned until the following morning, at 9 o'clock.

Fourth Session—Thursday Morning.

After the reading and approval of the minutes of the third session, the report on the President's address and Secretary's report was taken up, and, after discussion, the following resolutions were adopted:

Resolved, That the officers of this Association be empowered to enter into correspondence with any international body that may have been created, for the purpose of attempting a unification of the plans upon which the different Pharmacopœias have been constructed.

Resolved, That the Executive Committee, with the approval of the President and Treasurer, be empowered to publish annually, with the Proceedings, the likeness of one or more of our departed members, and that for the forthcoming volume our much lamented friend, Prof. William Procter, Jr., be selected.

Resolved, That a committee of three be appointed by the President to report at our next meeting upon the feasibility of the publication of a table of maximum doses, and to devise a plan by means of which physicians can distinctly indicate unusually large doses in their prescriptions.

Resolved, That a committee of three be appointed by the President to report at our next annual meeting upon the suggestion of our late President in reference to furnishing copies of papers read at our meetings to pharmaceutical journals in advance of their publication in the Proceedings.

Resolved, That the members of this Association are earnestly requested to call the attention of their neighboring pharmacists to the aims and objects of the Association, and use strenuous efforts to induce them to become members.

In compliance with these resolutions, the President appointed Messrs. Wm. Saunders, of London, Ont., Louis Dohme, of Baltimore, and W. H. Pile, the Committee on Maximum Doses, and Messrs. A. W. Miller, of Philadelphia, J. F. Hancock, of Baltimore, and Ottmar Eberbach, of Ann Arbor, Michigan, the Committee on the Publication of Papers in Advance of the Proceedings.

Notice was given by Prof. Moore of a proposition to alter Chap. VIII, Art. 2, of the By-Laws, so that the President's address may be read near the opening of the first session; and by the Secretary, to alter the same article so as to define more clearly the duties of the Nominating Committee.

After the election of four new members, Messrs. Averill and Has-

sencamp acting as tellers, a committee of three was appointed to consider and report on the time and place of the next annual meeting. The Committee consisted of Messrs. Heinitsh, of Pa., Judge, of Ohio, and Neergaard, of New York.

A paper on granulated effervescent salts was read by Mr. R. V. Mattison in answer to query 39; no formulas being given in the paper, the subject was, on motion of Mr. Lemberger, referred to the Committee on Unofficinal Formulas.

Mr. J. F. Hancock, in answer to query 8, read a paper on powdered blue mass, which elicited some discussion in relation to the probable oxidation of the mercury when prepared and kept in the form of powder. The subject will be further investigated.

In relation to the preservation of garlic, Prof. Remington stated that Mr. Wallace Procter's experiments had failed to discover another method of preventing it from changing in appearance, besides the one of keeping it in a dry and cool place.

Prof. J. Lawrence Smith, on invitation to address the meeting, spoke of the life-long labors of Liebig, the father of organic chemistry, and suggested the propriety of the pharmacists and druggists of this country to contribute towards the Liebig memorial fund. After some discussion it was, on motion of Prof. Moore, resolved to appoint a committee of three to act in conjunction with the Chemists' Committee on the Liebig memorial, and that each organization represented in the Association be requested to appoint a sub-committee for the purpose of obtaining subscriptions. The committee was subsequently appointed, as follows: P. Balluff, of New York; J. F. Hancock, of Baltimore, and A. E. Ebert, of Chicago.

A communication was received from Professor Yandell, inviting the Association to visit, this afternoon, in a body, the medical department of the University of Louisville; the invitation was, on motion, received, with the sincere thanks of the Association, but respectfully declined for want of time. Invitation cards for visiting Prof. J. L. Smith, at his residence, 71 Broadway, on the evening of Sept. 11th, between the hours of 8½ and 12 o'clock, were, on motion, thankfully received.

Some remarks were made on chenopodium, leaving it undecided whether petroleum-benzin be capable of exhausting this fruit completely of its anthelmintic constituents.

The following papers were read: On colchicin, by O. Eberbach (query 43); On cleanliness as a pharmaceutical virtue, by J. M. Ayers

(query 48); On so-called chemically pure mineral acids, by P. W. Bedford (query 51); also, a communication from Mr. C. C. Fredigke, stating that a chemical analysis of the root and berries of *Phytolacca* would be insufficient to answer the query.

A motion to adjourn until 3½ o'clock P. M. was then carried.

Fifth Session— Wednesday Afternoon.

Vice President Roberts occupied the chair. The reading and approval of the minutes was followed by the following, offered by Mr. Wm. Saunders:

Resolved, That, in view of the great loss which this Association has sustained in the death of one of its founders, Professor Wm. Procter, of Philadelphia, we desire now to express and place on record our heartfelt sorrow at this sad event, which has deprived us of the presence and valued counsels of one of our best-beloved members; and, while recognizing with tenderest memory his great worth and life-long labors in the interests of pharmacy, wish, by this resolution, to render a spontaneous and grateful tribute to one who has ever been ready to lend a helping hand in every good work, and whose genial, social qualities and unvarying kindness to any who needed help, as well as his great scientific attainments, had endeared him to us all; and, while fondly cherishing his memory, would convey our tenderest sympathies to his bereaved family.

Resolved, That this resolution be published in the next volume of the Proceedings, and that the Secretary be requested to transmit a copy to his family, signed by the officers of the Association.

The resolutions were unanimously adopted.

The Committee on the Place and Time of the Next Annual Meeting reported in favor of Boston, the meeting to convene on the second Tuesday of September, 1875, at 3 o'clock P. M. An amendment, to substitute for Boston the City of Toronto, Can., was lost by a vote of 16 ayes against 29 nays; but an amendment to meet on the first Tuesday of next September, was carried. A motion to extend the next meeting over an entire week was lost by a vote of 16 against 27, the opinion prevailing that the duration of the meeting should be subject to the amount of business before the Association. Mr. S. A. D. Sheppard was elected Local Secretary for the ensuing year.

The amendments to the by-laws proposed at the twenty-first meeting were considered and adopted, viz., Chap. II, Art. 1, the sum of $500 was altered to $600, and Chap. IV, Art. 4, the sum of $300

to $400. The salary of the Reporter on the Progress of Pharmacy for the coming year was fixed at $500.

The amendments proposed at the fourth session were considered, and Chap. VIII, Art. 2, was altered so that the President's Address may be read after the appointment of the Committee on Credentials; and charging the Nominating Committee with the duty to nominate officers and standing committees for the ensuing year.

Resolutions concerning the liquor dealers' license of apothecaries were offered by Mr. G. H. Schaefer. The subject having been entrusted to a special committee for some years past, the resolutions were voted down.

A motion to authorize the Treasurer to pay any necessary expenses of standing committees, not to exceed $25 for each committee, was, after some discussion, withdrawn.

Professor Diehl read the introductory portion of his report on the Progress of Pharmacy, which was referred for publication.

The Committee on the Photographic Album reported that they had received, during the past year, about thirty photographs.

The Association adjourned till Friday at 9 o'clock A. M.

Sixth Session—Friday Forenoon.

President Diehl called the meeting to order. After the reading of the minutes, letters were read from Mr. L. M. Royce, in relation to the substitution of chicory for taraxacum (query 46), and from Mr. F. V. Heydenreich, in regard to pancreatin (query 21). All queries, not otherwise disposed of, were, on motion, dropped.

The Liederkranz Society, of Louisville, extended an invitation to the members and their ladies to attend a promenade concert, to be given that evening at Woodland Garden. The invitation was accepted with thanks.

The following volunteer papers were read: On home-made chemicals, by J. R. Mercein; On the officinal rhizomes of the genus *Veratrum*, by Ch. L. Mitchell; On the antiquity of the apothecaries' craft and title, by I. B. Patten; On bromide of ammonium; On phosphoretted resin and on the construction of hydrometers intended for certain liquids, by Dr. W. H. Pile.

Mr. A. E. Ebert exhibited a sample of what has been offered in several States as American opium, and with which article many country physicians had been cheated. It contains but traces of morphia;

when offered for sale it bears some resemblance to opium, but in damp weather assumes the consistence and appearance of an extract. The party offering it for sale usually carries a number of the cakes in a carpet-bag, and states that it has been recommended by Dr. Squibb and Professor Procter, and is used by prominent manufacturers. Mr. R. V. Mattison also gave some information about this individual, who, in different places, names different localities as the place where this fraud is manufactured; it appears to be chiefly extract of lettuce. A vote of thanks was unanimously passed to Messrs. Ebert and Mattison for their efforts in exposing this swindle.

Mr. J. F. Hancock, for the Committee on Unofficinal Formulas, reported a number of formulas for unofficinal preparations, which were referred for publication. On behalf of the Chicago College of Pharmacy, a set of formulas for elixirs was presented, with the recommendation that they be adopted in lieu of those adopted at the meeting last year (see *Amer. Jour. Pharm.*, 1874, Feb., p. 83). A resolution was offered by Mr. Peixotto that all the formulas for elixirs be referred to a committee of three, to be critically examined by them, modified, if necessary, and reported on in time for the publication of the Proceedings. The motion was adopted with an amendment offered by Mr. Roberts, that the committee report at the next annual meeting. A motion offered by Mr. W. S. Thompson, that the formulas of the Chicago College of Pharmacy be published in the Proceedings, was lost. The Committee appointed under the above resolution consists of Messrs. William McIntyre, R. V. Mattison and G. W. Kennedy.

Mr. Hancock exhibited a patented glass percolator, with a glass stopper, the latter being intended to prevent the evaporation of the menstruum, by condensing any volatilized portion upon the under side of the stopper.

Six gentlemen were elected to membership, Messrs. McAfee and McIntyre acting as tellers.

A communication from Dr. Streit, on pharmaceutical laws, was referred to the Committee on Legislation.

A communication from Mr. W. C. Bakes, proposing the appointment of a committee for the purpose up fitting up a store, which should represent the highest type of American Pharmacy, for exhibition at the Centennial Exposition in 1876, was laid upon the table.

Mr. C. W. Holmes, on behalf of the Committee on Specimens, read a synopsis of their report, to finish which sufficient time was granted.

The report of the Committee on Papers and Queries was read and referred for publication.

The collection of pressed medicinal herbs, exhibited by B. O. and G. Wilson, of Boston, and the Caucasian silk cocoons and specimens of *Pyrethrum roseum*, exhibited by M. E. Betannelly & Co., of Philadelphia, were presented to the Louisville College of Pharmacy.

According to a resolution offered by Dr. A. W. Miller, proprietary medicines of foreign manufacture will hereafter be rigidly excluded at the exhibitions in the same manner as our domestic nostrums.

A resolution that patent apparatus for pharmaceutical use be admitted to the exhibitions, and to illustrations and descriptions in the Proceedings, was laid upon the table.

The following resolutions, offered by the Business Committee, were unanimously adopted:

"*Resolved*, That the thanks of the visiting members of the American Pharmaceutical Association are due and are hereby tendered to our brethren of Louisville for the courteous reception that they have extended to us; that to them is due the fact that our meeting will rank amongst the most pleasurable that we have ever attended.

"*Resolved*, That the thanks of the American Pharmaceutical Association are hereby tendered to the press of Louisville for the exact and fair reports they have made of our proceedings."

Adopted with acclamation.

The Association then adjourned, to meet in Boston, on Tuesday, September 7th, 1875, at 8 o'clock P. M.

PHARMCY TWO HUNDRED YEARS AGO.

The Royal Pharmacopœia, Galenical and Chymical, according to the Practice of the most Eminent and Learned Physitians of France, and publish'd with their several approbations. By Moses Charras, theK ing's Chief Operator in his Royal Garden of Plants. Faithfully Englished. Illustrated with several copper plates. London: Printed for John Starkey at the Miter within Temple-Bar, and Moses Pitt at the Angel in St. Paul's Church-Yard. 1678.

The above is the title of an antiquated work in my possession, and I thought, perhaps, in these days of syrups, elixirs and sugar-coated pills, a short description of its contents might not prove uninteresting to the readers of the Journal. The work is prefaced by the "Approbations of several learned Doctors, besides the Dean and Doctors of the Faculty of Physick in the University of Paris."

The first part (galenical) treats of the different "medicaments" and their mode of preparation, and defines a medicament to be anything that is capable to change our nature for the better. "Poyson differs from medicament in this, that it destroys our nature; but it may pass for medicament in regard that Pharmacy is able to correct and tame whatever it has of wild and mischievous, and render it wholesome." "The matter of medicaments are taken from vegetals, animals and minerals."

By vegetals is understood "Trees, shrubs, brambles, herbs, with all their parts; all things that belong to or grow upon them; and in general everything that has a vegetative life." Here follow the names of the "vegetals." "By animal I understand fowl, land creatures, water animals, and such as are accustomed to land and water; and not only such as are made use of whole, as scorpions, frogs worms, chestops, little dogs, emmets, cantharides, lizzards, etc., bu. all the parts of the bodies of animals which may be used in physick, not excepting their excrements and superfluities, as are the brain, the fat, the blood, the hair, the dung and urine of men; the horn, the pizzle, the stones, the suet, the marrow, the bone of the heart of a deer; the liver and inwards of a wolfe; the grease, melt, the yellow stones and bone in the heart of an oxe, the foot of an elk, the lungs of a fox, the brains of a sparrow, the tooth of an elephant and a wild boar, the horn of unicorn and rhinoceros, the ringbone, hoof, fat and dung of a horse; the dung of a mule, or ass musk; perles, bezoar, shells; the heart, liver, trunk, head, tayl, fat and skin of vipers," etc., etc. Following is a list of the metals, among which is found sulphur, alum, chalk, bismuth, zinc; including as *metals*, water, rain, hail, snow, ice and thunder-bolts.

The virtues of medicaments are divided into three qualities. I will only mention the last: "The third qualities are hidd'n and we can only find them out by experience. As, when a jasper apply'd to a wound stops the blood; when a toad dry'd, being held in the hand, stays bleeding at the nose and asswages the tooth-ache, which is also performed by the bone in the fore-leg of the same toad; when a stick of ash, boyl'd under a certain constellation, stops all losses of blood. As, when a hazel stick, gather'd in its proper season, heals all contusions; when the eagle stone, hung about the neck, hinders abortion, and hastens and facillitates the birth, being tyed to the thigh. As, when certain plants ty'd to a horse's tayl heal the farce; and several

other effects of the same nature, of which philosophers labour to give the natural reason."

The author had an opinion of the qualifications of a pharmacist that has lost none of truth by age. "No man can undertake the preparation of any medicin before he know it; no more can any man practice mixture before he know preparation, for all medicaments are not so simple, so known, so usual, so easie to mixe, as water and wine."

I will close by giving a few of the formulas.

"*Emulsion against the Dysenterie.*

"℞	Sweet Almonds, blanch'd,	℥j
	Lettice,	
	White Poppy,	
	Quinces,	ää ℥ij

Bruise all these in a marble mortar, pouring upon them by degrees one pint of the decoction of cleans'd barley, purslain, and speedwell. Strain and press them; to the straining add syrup of quinces and white poppy ℥j. Make three doses, to be tak'n at convenient hours."

Some of the formulas are notable from the number of the ingredients, one of them calling for sixty-three different articles.

Here is one, "recommended to asswage the pain and to facilitate the delivery of women; the whole region of the belly being anointed therewith:"

"℞	Live Vipers, large, fat and vigorous,	No. xij
	Pure Common Oyl,	℔ij
	Strong White Wine,	℥ij

Pour the oyl into a glaz'd earthen pot with a narrow mouth and let it boil in a hot bath till you cannot endure your finger in it, then plunge the vipers into the oyl; when they are stiff'd pour in the wine, cover the pot and set it a boiling till the moisture of the vipers be almost consumed, then, having strained and strongly pressed forth the whole, and separated the oyl from the feces, keep it for use."

"*Pills, without which I would not be.*

"℞	Extract of Aloes, succotrin, prepared with juice of pale roses,	ʒxiij
	Diagrydion,*	ʒvj

* An old name for scammony.—*Editor Amer. Journ. Pharm.*

Whitest Agaric,	
Choice Rhubarb,	
Leaves of Senna, cleans'd, ...	℥ss
Red Roses, cleans'd,	
Tops of Wormwood,	
Seeds of Violets, and	
Dodder,	
Mastich, ...	ää ℥j."

* * * * * * * *

"The good effects which these pills have wrought have won for them the title of *sine quibus effe nolo—without which I would not be.* They purge the Flegm wonderfully, and both Cholers; they are very prevelant against Diseases of the Head, especially those of the Eyes and Ears. They are to be taken after the first sleep, or in the morning fasting. Their dose is from a scruple to a drachm, and sometimes to four scruples."

JNO. E. WEST, M. D.

ST. CLAIRSVILLE, OHIO.

EMULSIO CARNIS.

By JAMES KEMBLE.

It has long been a question with me whether or no fresh raw beef could not be utilized as a medicine, and administered in a concentrated fluid form, where a strong nourishing diet is more needed than medicine. Seeing an article in the *Medical Times* on the administration of raw beef, I concluded to institute a series of experiments, to determine the possibilities of preparing a solution of it that would keep long enough without change to be of practical use. My experiments and their result were as follows:

Fresh Raw Beef (lean), ...	℥ii
Sweet Almonds, ...	℥iv
Bitter Almonds, ...	℥iii
Sugar, ...	℥ii
Water sufficient for emulsion, . . .	f℥viii

I rubbed the almonds, beef and sugar to a fine pulp in a wedge-wood mortar, then added water gradually until a smooth paste was formed, added more of the water and strained through a sieve, returned the mass to the mortar and manipulated with the balance of the water until f℥viii of emulsion was obtained, strained through a finer strainer

and bottled; this in my experiment, I designate as No. 1 emulsion. I then mixed of

(2) No. 1 Emulsion, fʒxiv with Brandy, . . . fʒii
(3) No. 1 Emulsion, fʒxiv with Sherry wine, . . fʒii
(4) No. 1 Emulsion, fʒxiv with Glycerin, . . fʒii

Experiment No. 2:

A. Fresh Raw Beef (lean), ... ʒii
Sweet Almonds (roasted), ... ʒv
Bitter Almonds, ... ʒii
Sugar, ... ʒii
Water sufficient for emulsion, ... fʒviii

Manipulated the same as No. 1, until an emulsion was obtained; it was mixed as follows:

B. Emulsion No. 2, fʒxiv with Brandy, . . . fʒii
C. Emulsion No. 2, ʒxiv with Sherry wine, . . fʒii
D. Emulsion No. 2, ʒxiv with Glycerin, . . . fʒii

I made the above divisions for the purpose of testing the preservative properties of each agent employed, with the following results:

After twenty-four hours, all sweet and good.

After forty-eight hours—

No. 1. Emulsion fermented; unfit for use.
No. 2. Perfectly sweet.
No. 3. Faint odor; least bit sour.
No. 4. Sweet and good.

A. Emulsion No. 2, fermentation commenced.
B. Sweet and good.
C. A little sour, but no odor.
D. Sweet and good.

After seventy-two hours—

No. 2. Slightly sour, but without odor.
No. 3. Fermentation commenced; putrescent odor.
No. 4. Fermentation commenced; putrescent odor.

B. Good, but a slight sour taste left on the tongue.
C. No odor, but sour.
D. Sweet, good and palatable.

After ninety-six hours—

B was unfit for use; fermented.
C was sour; unfit for use; fermented.
D was very slightly changed, still palatable.

It will thus be seen that the brandy and glycerin possess about equal preservative properties, although, in the latter case, the glycerin seems to preserve the greater length of time. The preference would

seem to be in favor of roasting or charring the sweet almonds, as it destroys, to a considerable extent, the tendency of the emulsion to induce fermentation.

I then made another lot of emulsion and tried it with ʒii of brandy and glycerin, respectively, to fʒi of emulsion; also with three grains of sulphite of calcium, sulphite of sodium and chloride of sodium, respectively, to fʒi of emulsion; the result was like experiment No. 2, with the glycerin and the brandy. The chloride of sodium mixture began to change in thirty-six hours (perhaps would not have done so if the proportion of salt had been larger). Sulphite of calcium and sulphite of sodium acted very similar; the emulsions showed no change for sixty hours, were fit for use for seventy-six hours, although change had commenced, but were unsightly, unpleasant mixtures, while glycerin and brandy, or both combined, possess greater preservative properties and make a pleasant palatable mixture.

I then made some more of the emulsion to ascertain *how much* beef could be incorporated in a pint of emulsion, and found that eight ounces may be incorporated into it; but for practical and economical purposes, six ounces is all that can be thoroughly exhausted of all soluble matter.

It will be seen, by the experiments here made, that raw beef is applicable to every-day practice in hospitals, cities and places where there is access to markets for the beef. Physicians can prescribe the dose to suit their patients, and it will have to be made fresh every three or four days during warm weather. My experiments were made in July, with the thermometer ranging among the nineties. I judge that in cold weather, this preparation could be made to keep good and sweet for a week or more.

I would suggest a formula for general use, as follows, viz.,

Fresh Raw Beef (lean),	℥vi
Sweet Almonds, deprived of their shells and roasted	℥i
Bitter Almonds,	ʒvi
Sugar,	ʒvi
Glycerin,	℥ii
Water sufficient for emulsion,	℈i

Rub or beat the beef, almonds and sugar to a fine pulp in a wedge-wood or wooden mortar, then add water gradually until a smooth emulsion is formed, and strain through a seive or coarse cloth; return the residuary mass to the mortar, manipulate with the balance

of the water until f℥xiv are obtained, strain all through a finer strainer, add the glycerin and bottle; the bottle is to be kept well corked. Dose:—f℥i, containing ℥iii of the beef.

The physician in prescribing, can order the addition of brandy, pepsin, or any other medicine he wishes to administer at the same time. I tried combining ferric pyrophosphate with the mixture; it combines well, but makes a dark, unsightly preparation, on account of the combination of the iron with the blood contained in the beef.

Philadelphia, August, 1874.

CALCINED MAGNESIA IN MIXTURES.

By Hans M. Wilder.

Some time ago, I received the two following prescriptions:

I.	Magnes. ustæ,	℥ii.
	Aquæ destill.,	℥ii. ♏.
II.	Magnes. ustæ,	
	Bals. copaivæ,	ää ℥i.
	Aq. camphoræ,	℥v.
	Syrup. tolu,	℥i.
	Spir. æth. nitr.,	℥ii. ♏.

As both prescriptions were written very plainly, and no objections otherwise could be made to them, I dispensed them to the letter, although I knew that both mixtures would become solid in a short time. I was hereby induced to examine whether it would not be possible to keep them in a liquid state, at least for a few days. An observation of Mr. Gobley's (*Amer. Jour. Pharm.*, xvi, 1845, p. 273), that the presence of sugar would retard, if not altogether prevent, solidification, led me to try the addition of sugar also.

I consequently made eight mixtures:

1. One part light calcined magnesia and eight of water.
2. The same, but submitted to boiling.
3. One of light calcined magnesia and eight of simple syrup.
4. One of light calcined magnesia, six of water and two of syrup.
5. The same, submitted to boiling.
6. One of light calcined magnesia, four of water and four of syrup.

Further:

7. One heavy calcined magnesia (Powers & Weightman), and eight of water.
8. The same, submitted to boiling.

After a quarter of an hour, 1 was jelly-like; 2, somewhat stiffer (by the addition of one drachm of water it could be shaken); 3 could be freely shaken and poured out; 4, somewhat between 2 and 3; 5, just the same; 6, stiff jelly.

After twenty-four hours, 1, 2, 4 and 5 were quite stiff; addition of a little water to 1 made it quite fluid; the consistence of 2, 4 and 5 was not altered; 3 and 6 decidedly hard.

The two heavy magnesia mixtures behaved like any mixture of water and an insoluble powder, remaining at the bottom of the vial, but very easily shaken up.

The results I arrived at are: 1st, To mix light calcined magnesia with *not less* than twelve parts of water; or, where the amount of liquid cannot be increased, to use the heavy calcined magnesia. 2d, Boiling does not make the mixture more fluid. 3d, Sugar does not prevent hardening, except on increasing the quantity of liquid, and is then not necessary.

MUCILAGE OF GUM ARABIC.

The instability of mucilage of gum arabic, when prepared in accordance with our Pharmacopœia, makes it necessary for pharmacists to prepare it in small quantities or else dispense a preparation unfit for medicinal use. In fact, during the summer months, the mucilage undergoes change so soon that we have prepared it as called for, using granular acacia. This has been a serious inconvenience, and hoping to overcome it, we made a few experiments last May, and found that by substituting "tolu water" for water, the mucilage kept well several months.

The "tolu water" is prepared as follows:

℞.	Tinct. Tolu (saturated), ...	ʒii.
	Carb. Magnes., ...	ʒiv.
	Aquæ, ...	Oii.

Rub the tincture first with the carbonate of magnesium, and then with the water gradually added, and filter.

The mucilage thus prepared has a faint odor and flavor of tolu, which is not objectionable and in many instances might be advantageous; in appearance it is identical with the officinal.

We think tolu prevents change in liquids upon the same principle and just as effectually as benzoin obviates rancidity in unctuous sub-

stances, and its preservative influence might be utilized in the preparation of many syrups and mixtures, which are remarkable for instability.

Benzoin, storax or balsam of Peru, would no doubt prove as good a preservative as tolu, but we think tolu the least objectionable.

ARCHER & Co.

Norfolk, Va., September 11th, 1874.

PRESCRIPTIONS.

By M. S. Bidwell.

Notwithstanding all that has been written by physicians and pharmacists on this subject, there are some points that do not seem to have been placed before the two professions with sufficient clearness. As this is a subject of interest to all your readers, will you allow me to attempt this?

The first question is on the ownership of the prescription or recipe. To which one of the three parties concerned—physician, patient and pharmacist—does it belong? It may aid us in answering this question fairly, if we first consider what a prescription is, illustrating it by an example. Suppose a physician to visit consecutively three patients. To the first he may say, "You need some beef tea: get a piece of the round to make it of. I will give you a note to the butcher, explaining what kind you want." To the second he might say: "Send your boy to my office with this memorandum, and the student there will give you the necessary medicine"—the memorandum directing, perhaps, to give him four pills out of the box on the lower shelf, or any other instructions that the student will understand. To the third he gives a recipe, in the usual form, directing the pharmacist into whose hands it may come to put up a certain mixture for the patient's cough. Now, is it not evident that the note to the butcher, the memorandum to the student, and the recipe to the pharmacist are precisely analogous? We may therefore define a prescription to be a confidential letter from a physician to a pharmacist, instructing him to dispense certain medicines according to directions given. So far, then, as these two parties are concerned, it would follow the same rule as any other letter—the recipient being entitled to its custody, but having no right to publish it, or use it in any similar way, without the consent of the writer.

But there is a third party in this case—the patient; and by universal custom, sanctioned by law wherever the statutes touch the subject, he is entitled to a copy of the document. The original should remain in the hands of the pharmacist, for reasons which need not here be given.

The second point concerns what is called the renewal of prescriptions, or, more properly, dispensing the same medicines repeatedly on the same recipe. This very common practice has been extensively denounced by physicians, on various grounds, but with a curious and complete disregard of the party most directly interested—the customer. Their usual line of argument on this subject, if carried out to its legitimate conclusion, would forbid the sale or use of any medicines unless by the express direction of a doctor. They say, with perfect truth, that much harm is done by ignorant prescribing, and by unqualified persons dosing themselves and others with medicines whose powers they do not understand. Therefore the government, or the druggist, or somebody, should henceforth decree that this be done no more. They do not apply or state it so broadly as this; but the principle is evidently the same, whether the medicine were originally prescribed by a physician or not; so that it is here stated in ts broadest form, in which shape it is a clear *reductio ad absurdum*. The evident answer, if any answer is needed, would be, that in this country every one is presumed to be able to judge for himself, and must be allowed to take his own risk, if he will. Any interference on the part of the druggist would naturally be resented as an impertinence, and be met by the just remark that it was none of his business.

In the more special case immediately under our notice, the reduplication of the prescription cannot be prevented, even if both physician and druggist should try to do so. The patient is entitled to a copy, and can, of course, have the same medicine put up from that, or from a copy of that. Even physicians will hardly claim that no druggist should ever put up any medicine that any physician had ever prescribed!

There is another complaint often made by physicians, which is, in some respects, the reverse of this, viz., that prescriptions are often "stolen" from them by druggists and others, and used to their disadvantage, by curing their patients without their help. In the former case, the ostensible ground of complaint was that the recipe

might injure the patient; in this, the danger is that it may benefit him, without bringing any pay to the physician. Poor doctor! so long as he does not get his fee, he is equally dissatisfied, whether the patient grows better or worse! Well, it is hard, if a man has got hold of an efficient formula for a certain class of cases, to have Tom, Dick and Harry steal his thunder, and cure just as many and just as well as he can himself, and perhaps make a great flourish about it, too. But our pity for him will be lessened if we remember that he himself owes almost all of his prescriptions to others; and it will be reduced to a minimum by the reflection that it is only by the free contribution of many workers that medical science (or any other) can ever be built up. The only way a man can keep others from knowing what he does, is to keep it a secret, which, if generally carried out, would throw us back into the dark ages.. At the same time it must not be forgotten that, if any one wishes to monopolize any item of knowledge, he has a perfect right to do so, and no one can justly complain of such a course, though no one can admire it.

Briefly to recapitulate:

(1). A prescription is a confidential letter from a physician to a pharmacist, the latter having the right of custody, but not the right to make it public. The patient, being an interested party, has a right to a copy.

(2). The druggist's business is to furnish whatever medicines the customer wants, whether prescribed by a doctor or not, the patient taking his own risk.

(3). The physician, like any other scientific man, should be liberal in communicating what he originates, because most of his own knowledge is derived from others, and in this way only can science be advanced. But this obligation is ethical, not legal, something to be desired and recommended, not enforced.

I hope no part of the above will be understood to countenance the practice of "prescribing across the counter," or of prescribing by any other unqualified party. This is a nuisance in the drug business, and one that every intelligent and fair minded pharmacist will endeavor to abate. But the doctors do not seem to me to be really the sufferers, nor (according to my observation) are the druggists usually the sinners. Both the fault and the suffering belong to the ignorant public, who insist upon the druggist "fixing them up something for a cough," so that they may evade the payment of the doctor's fee. This subject is a painful and suggestive one, too extensive to be followed out here.

NOTE ON NEW ZEALAND KAURI GUM.

By M. M. Pattison Muir, F.R.S.E.

This gum or resin exudes from a tree (*Dammara Australis*) belonging to the family of pines. It is largely imported into this country for the purpose of making varnish.

The sample which I have examined was sent to me about two years ago by my brother, John M. Muir. The substance was in the form of a hard, brittle, yellowish-white mass, which could be easily cut with a knife. By rubbing, the surface became highly polished, being at the same time electrically excited.

Here and there throughout the mass non-transparent milky blotches occurred. The fracture was conchoïdal. Specific gravity = 1·042. On treating the powdered gum with water, part of it dissolved, but the greater portion remained unacted upon. This insoluble portion was partially dissolved by alcohol, in which solution the addition of water caused a white turbidity.

About fifty-two per cent. of the original substance was found to be soluble in boiling alcohol, while the residue was almost entirely dissolved by digestion in ether at the ordinary temperature.

The alcoholic solution of the gum showed a slightly acid reaction; traces of benzoic and succinic acids were also discovered.

From these reactions "Kauri gum" appears to be a mixture of resins (probably more than one) and true gum: hence it may be classed among the gum-resins. The following are some of the reactions of this substance with reagents:

1. Strong nitric acid, aided by gentle warming, attacks Kauri gum violently, the products of the reaction being a yellowish-white solid mass, and a small quantity of a reddish liquid. The solid substance is but slightly soluble in hot alcohol or in hot ether, the liquid gives a yellow flocculent precipitate when thrown into water.

2. Concentrated sulphuric acid dissolves the gum, forming a clear red liquid, from which a white semi-solid substance precipitates on the addition of water. If heat be applied, sulphuric acid partially decomposes the gum, at the same time forming a dark-colored liquid, in which water causes no precipitate.

3. Bromine and chlorine both attack Kauri gum violently, dense fumes being evolved, the product in the former case being a blackish mass, which dissolves in alcohol, with formation of a red liquid. In the latter case carbon only remains.

4. Caustic potash or soda when boiled with this substance, causes it to swell up, and eventually to form a light yellow hard mass, only a very small quantity of the gum being dissolved.

When Kauri gum is subjected to dry distillation, it melts, froths up, and gives off dense fumes along with a quantity of a heavy oil, which is of a brown color, and exhibits a green fluorescence.

Accompanying this oil is a considerable amount of water. The yield of admixed oil and water amounts to about one-half of the original amount of gum; the residue in the retort is a thick dark red liquid, which solidifies on cooling to a brittle, transparent solid mass.

After drying the oil by means of calcium chloride, and subjecting it to distillation, it was found that less than one-half distilled over below 320° C., and that the remainder solidified when cool into a substance resembling that which remained after the distillation of the original gum. Of the oil boiling below 320°, the greater portion was found, by repeated fractionation, to boil between 155° and 165°, while a small quantity boiled between 270° and 290°.

The oil boiling between 155° and 165°, was nearly colorless, had a resinous odor, was immiscible in water but soluble in a tolerably large amount of alcohol. Its specific gravity at 20° was ·854, on analysis it gave the following numbers:

·172 grm. gave ·216 grm. water = ·024 grm. hydrogen = 10·90 per cent.

·172 grm. gave ·499 grm. carbon dioxide = ·136 grm. carbon = 79·07 per cent., leaving 7·03 per cent. of oxygen.

These numbers would lead to the formula $C_{10}H_{20}O_7$, but the quantity at my disposal was so small, that I do not feel inclined to definitely admit the correctness of this formula until further experiments have been undertaken.

Hydrochloric acid gas changes this oil into a dark greenish brown liquid.

The quantity of Kauri gum which I obtained from New Zealand was too small to admit of further experiments being carried out, but I hope soon to receive a further supply, when I shall resume this investigation.—*Journ. Chem. Soc., Aug.*, 1874.

LICORICE.

The licorice plant may be seen growing at Mitcham, in Surrey, and at Pontefract, in Yorkshire, and the produce, we were informed

upon a recent visit to the former locality, is considered more valuable than that imported from abroad.* The shrubs present the appearance of an ash plantation, from which they could scarcely be distinguished at a distance. The stems are from three to four feet high, growing erect, equal in thickness to a middling-sized willow, and covered with dull green colored leaves, clammy to the touch on their under side. The flowers, which are of a pale blue, are succeeded by very short smooth pods containing three or four seeds. The length of time required for maturity is from three to four years, when the roots can be taken up and the proprietor may expect to derive some return for his outlay in rent and labor. The depth to which these strike downwards often compares with the height of a man, and the soil needs, therefore, to be of a deep sandy loam, entirely free from stones, which cause the roots to become crooked or warped, and thus diminish the value of the licorice as a salable commodity.

The same land will produce a continuous crop, but then a good addition of manure is needed, about forty or fifty tons per acre, depending upon the previous richness of the soil. The ground, to be properly prepared, must be spade trenched to the depth of four or five feet, and laid in ridges upon the top until the spring; when the mould has become pulverized the ridges can be levelled and prepared for planting, the best time being the month of March. The beds are three or four feet wide, and these must be kept clean during the summer, and about November, when the sap has descended, and the tops appear yellow, the old stems or stalks are cut off close to the ground with a sharp pruning knife, the spaces between the rows being turned over and left rough. The roots are usually dug up with a large three-pronged fork, and stacked in trenches, and this stacking is effected in a dry and sheltered place, the roots being placed upright with layers of sand between them, and a good layer of several inches thick on the top. In this manner the stock is preserved by the proprietor until required for market. Near Pontefract the licorice is

*Some years ago, an attempt was made to cultivate the licorice plant in several parts of the United States on a somewhat extended scale, and with apparent success. It would be of great interest to learn whether the cultivation is still continued or has been abandoned, and in the latter case to learn the causes of failure. Can any of our readers supply us with some facts?—Editor Am. Journ. Pharm.

cultivated chiefly for the preparation of a fine kind of cake, which is well known as the Pontefract lozenge, which is made of a refined licorice, and bears the stamp of the city arms. At Mitcham the licorice is tilled for the sake of its long slender roots, that find their way to the wholesale druggists and Covent Garden. A good-sized stick is about the size of a well-grown horse-radish, although some are as large as a small parsnip, and three or four feet in length. In taking up the crop a trench is made out to the depth of three, four, or five feet, according to the depth of the former trenching; then a rope is tide round the top, but it takes all the strength of a man to pull the root up, and it generally breaks up some foot or so below the trenches; this root is not eyed like the horse-radish, and when once broken off it can never sprout again. During the autumn there are small roots that descend only a few inches beneath the surface; these must be forked up and cut close off by the stem of the plant, and if fresh plantations are wanted they are cut into pieces and laid in heaps out of doors, where they are covered with straw and mould during the winter, but if not wanted for planting they are sold for inferior uses. These roots are pithy and not half so sweet as the down root, and if not taken up the ground becomes full of worthless licorice, and the main crop is completely choked, as was the case before we understood its cultivation in this country.

The licorice has been growing at Mitcham since the days of good Queen Bess and Sir Walter Raleigh of grateful memory, who brought many new and useful ideas to this country, imbibed during his distant travels; and within the last thirty years there were beds of this shrub at New Cross, where the Thames had left its deposit of mud, but since occupied by the Brighton railway station. At the present time the knowledge of its treatment is confined to certain localities: owing also to the time which elapses before any proceeds can be realized, and the active competition from abroad, there does not seem, from these united causes, any probability that this cultivation will be greatly extended. The consumption is believed to have increased very much of late years, for in addition to its well-known uses by the druggists, quantities are employed in the making of beer, and in the United States still greater quantities in the manufacture of tobacco.

The root is found growing throughout the whole of the southern countries of Europe, extending from the Crimea to Portugal, but in Spain and Italy, and particularly in Sicily and Calabria, the juice

makes a considerable article of commerce with this country. The best Italian roots are obtained from Martucci, Ferrara, and Cassano, and are marked with their stamps; these contain sixty-two to sixty-seven per cent. of soluble extract, and seventeen to twenty-six per cent. of insoluble residue. The exports from Italy in 1870 were 177,462 kilogs., of which 60,365 went to Great Britain; 43,680 to Austria; 64,787 to the United States; the remainder to France and Holland. From Naples the value of the licorice exported in 1872 was 63,394*l.* sterling. In Spain, the provinces of Seville, Valencia and Catalonia are the most productive; from that country the exports in 1868 were 1,859,336 kilogs., of which 1,840,448 went to France; 2,393 to Great Britain; the remainder to Sweden, Hamburg and Portugal. In both these countries great attention is paid to the preparation of the sticks, which are termed "solazze" when in a soluble form. The boiling requires the utmost care, as the juice takes an unpleasant smell and flavor if burnt in the slightest degree. The paste is manufactured from the month of November till March, the warm season being very unfavorable for it; so much so, that it is not advisable to ship any in the summer, as it easily runs into one mass in the boxes, and then is only fit to be sold for damaged licorice. Of the dried root, one hundred pounds yield about thirty pounds of the black extract. When the extract has been obtained, it is poured into rolls of six or eight inches in length, which are bound with bay leaves to prevent their adhering together. The best quality should be bright, brittle, without pores, and of a good fragrant smell. The licorice grows wild in Greece, more especially in the province of Achaia, at Corinth, Phthiotes and Missolonghi, being in great abundance, and the quality is considered good. It is also amongst the products of the Levant. In the year 1872 the imports into Great Britain amounted to 28,000 cwts.; from France we derived 5,603; from Spain, 3,399; Italy, 11,170; Turkey, 5,754; other countries, 2,474; the whole valued at 75,091*l.* sterling. Our exports at the same time were 7,414 cwts., chiefly to the United States, British North America and Australia, valued at 21,146*l.* sterling. Our consumption of foreign licorice root, therefore, exceeded 1,000 tons weight, and worth upwards of 60,000*l.* The uses of licorice were well known to the ancients, and at the present day the Turks and Egyptians consume a drink, which is sold in the streets of their cities in the same manner as sherbet, and is known as "Ergoos;" in

France the licorice water is drunk at the public rendezvous under the name of "Coco;" it is slightly laxative and cooling, anti-scorbutic, and, unlike other sweets, it quenches thirst. — *Chemist and Druggist, August* 15, 1874.

THE CHEMISTRY OF MILK.

By Edward J. Hallock, A. M.

Like most other articles of food, milk consists largely of water, nearly 88 per cent. being present in pure and unadulterated country milk. Prof. Wanklyn gives the following as the average composition of country milk:

Water,	87·56 per cent.
Fat,	3·07 per cent.
Casein,	4·04 per cent.
Milk sugar,	4·62 per cent.
Ash,	·71 per cent.
	100·00

The fat, which exists in the form of minute globules, is a mixture of olein, palmitin, stearin, butyrin and other fats. When the little sacs containing this fat are broken by agitation, as in the operation of churning, the fats agglomerate together to form butter. The specific gravity of milk fat is about 0·9, while the solution in which it is suspended will average about 1·03, so that when milk is left at rest for two or three hours it rises to the top and forms what is known as cream. In the manufacture of butter, this alone is employed, as it contains all the fat, along with the peculiar flavoring matter of the butter. According to Chevreul, ordinary butter from cows' milk is composed of stearin, margarin and olein, with small quantities of butyrin, caproin and caprin, to which its odor is due. In fresh butter, the butyric acid ($C_4H_8O_2$) is combined with glycerin to form butyrin, an inodorous substance. On standing, the butyric acid is set free and imparts to rancid butter its well-known and unpleasant odor. Butyric acid, although not very pure, can be obtained by saponifying butter with an alkali and distilling the soap with sulphuric acid. It is employed in the manufacture of butyric ether, or oil of pineapple. Good milk usually contains about 10 per cent. of cream, and some idea of the purity and richness of the milk may be gained by pouring some of it into a graduated glass tube, and notic-

ing the number of spaces occupied by the cream after it is allowed sufficient time to settle. Tubes intended for this purpose are sold under the name of creamometers.

Casein is the name applied to the nitrogenous constituents of milk, which are coagulated by acids, and which have received this name from their use in the manufacture of cheese. A portion of the nitrogenous substance, known as albumen, is coagulated by boiling, and then forms those repulsive little films generally met with in boiled milk. Casein is soluble in fresh milk, but insoluble in milk which has "turned." Wanklyn attributes this to a molecular change, resembling the change from soluble silica to insoluble silica. This change, as we have said above, is produced by the presence of any acid; in "sour milk" it is caused by the lactic acid ($C_3H_6O_3$) formed by the incipient decomposition of the milk sugar. In the manufacture of cheese, the milk is curdled by means of rennet; but, before doing this, more or less of the cream is removed, rendering the cheese less nutritious than the milk from which it was formed. A skim-milk cheese contains but 6 per cent. of fat, while some rich English cheeses contain 30 per cent. The ultimate composition of casein is the same as albumen and fibrin. Milk from which both fat and casein have been removed as far as practicable is known as whey, and is essentially a solution of milk sugar with some mineral salts. Milk sugar can be prepared by coagulating the casein, and removing that along with the fat, and then evaporating the whey to crystallization and purifying by filtration through animal charcoal. It is manufactured principally in Switzerland, and comes into market crystallized on strings, when it somewhat resembles an ear of corn. It has the composition $C_{12}H_{24}O_{12}$, dried at 212° F. It is much less soluble than cane sugar, dissolving in 5 or 6 parts of cold water, and $2\frac{1}{2}$ parts of boiling water. It is not so heavy as cane sugar, and reduces the oxide of copper like grape sugar. Its principal use is in the preparation of homœopathic medicines, as envelope and dilutant.

The ash, or mineral matter, which remains when milk is dried up and the residue incinerated, consists mainly of phosphate of lime and alkaline chlorides. The quantity of mineral matter in cows' milk is but three-fourths of one per cent.; in human milk it is much less, or about one seventh of one per cent.

Testing Milk.—Since it has become customary for milk dealers to endeavor to palm off on their customers a minimum quantity of real

milk, mixed with a maximum quantity of water, under the name of milk, it is sometimes interesting to compare different samples of such milk for the purpose of determining the amount of water added. English chemists have devoted considerable attention to this subject, because there a law exists punishing adulterations in food and medicine, and we shall frequently have occasion to refer to their observations. The specific gravity of milk, as indicated by hydrometers made for the purpose, does not serve to detect carefully-conducted watering. The average density of good, pure milk is about 1·032. Since milk fat is lighter than water, the more cream the milk contains the lower its specific gravity, while skimmed milk has a higher specific gravity than unskimmed milk. Hence it is possible to preserve the normal density in watered milk by first removing a portion or all of the cream, and then adding just enough water to bring it back to its original density. To ascertain the quantity of water added, it is necessary to determine by analysis the quantity of fat present in the milk. John Horsley, F. C. S., accomplishes this in the following manner:* A glass tube, 11 inches long, and three-fourths of an inch in diameter, is graduated from 10 inches down, one-fifth of its length, into per cent., or hundredths. A tablespoonful, 15 c.c., or 250 grs. of milk are first poured into the glass tube; a smilar bulk of ether is next poured in, and the tube closed with the thumb or a cork, and agitated for four or five minutes. An equal measure of alcohol is next added and the whole well shaken for at least five minutes more, when, on placing it in an upright position on a stand, the oily or fatty matter will rise to the surface, and can be easily read off. Each line will correspond to 4·15 grains of solid butter, as proved by experiment. Milk which has 10 per cent. of cream will show two lines of butter oil, or 8·3 grains, for 250 grains of milk. If desired, the butter may be drawn off and weighed in a small platinum capsule.

Mr. Wanklyn prefers to evaporate 5 c.c. of the milk to dryness in a weighed platinum dish over a water-bath. The operation requires at least three hours. The residue equals the total milk solids, and averages, with a sample of good country milk, 12·45 per cent. This residue is treated with ether and heated to boiling, and the solution poured through a small filter, the operation of boiling and pouring off the ethereal solution being repeated three times. The solution of fat

* Chemical News, May 2, 1874, p. 224.

is placed in a larger weighed dish, and the ether gently evaporated by placing it in warm water. When, toward the close, it becomes turbid, the dish is placed on a water-bath and heated to 100° C. for a short time, until the fat is dry, when it is weighed. The weight of the fat, subtracted from that of the total milk solids, gives the amount of milk solids not fat, a very important datum, as it is the most constant quantity in milk analysis, and gives, by a very simple calculation, the extent of watering to which the milk has been subjected.

The determination of casein is usually unnecessary, but may be made to prove that the milk was adulterated with skim instead of water. The portion insoluble in ether is extracted with strong alcohol, then with boiling water, dried up in a water-bath, weighed, ignited, the ash weighed and its weight subtracted from the previous weight of casein and ash. The result is crude casein, including, of course, the albumen, &c. The use of skimmed milk is shown by the presence of more casein than the natural quantity, and less butter or fat.

The determination of the total ash is made by simply evaporating 5 c.c. of milk to dryness and igniting over a spirit lamp or Bunsen burner. If less ash is found than usual, it indicates watering; if more than usual, chalk or other mineral adulterant has been employed. —*Journ. of App. Chem.*, *July*, 1874.

IS OZONE A CONCOMITANT OF THE OXIDATION OF ESSENTIAL OILS?*

By Charles T. Kingzett, F. C. S.

It is generally stated in books that the oxidation of oil of turpentine is attended with the production of ozone. Thus, in Vol. iii. of "Miller's Chemistry" it is stated, "Oil of turpentine gradually absorbs oxygen from the air, with the formation of a certain proportion of ozone;" and in Gmelin's work (Vol. xiv) it is written, "Oil of turpentine absorbs oxygen gas, acquiring new properties, and being converted into ozonized oil of turpentine."

Further, Lawes, Gilbert and Pugh have stated their belief that the supposed ozone existing in the vicinity of vegetation is due to the oxidation of hydrocarbons evolved by plants (*Chem. Soc. J.* [2], i, 1863, p. 100).

* Abstract of a paper read before the Chemical Society (*Journ. Chem. Soc.* [2], vol. xii, p. 511).

These statements, variously modified, have been so often repeated, that at last they are almost universally received as matters of facts. But although a vast amount of work has been done on this subject, especially by Schönbein, whose peculiar views on the matter are so well known, yet it cannot be said that the information is absolute. On the other hand, there has ever existed more or less doubt about the formation of ozone by the oxidation of such bodies as oil of turpentine.

It was with the view of acquiring more certain knowledge that the author made a series of experiments, the results of which are recorded in a paper recently read before the Chemical Society.

In commencing his experiments he first of all wished to get some definite notion as to the rate of absorption of oxygen by such bodies as oil of turpentine. For this purpose the liquid to be experimented upon was enclosed in a graduated tube containing air or oxygen, and the volume of the gas read from time to time. It was thus seen that ether, potassium-naphtha, oil of turpentine, and such bodies rapidly absorb oxygen from air or oxygen gas.

A few cubic centimetres of naphtha absorbed 25 c.c. of oxygen in 36 days, *i.e.*, the whole of the oxygen present. In yet another experiment with air, the turpentine oil (not in sunlight) absorbed 10·5 c.c. of gas during 14 days, that being the theoretical amount of oxygen in the air used.

Benzen showed no absorption of oxgen during 40 days. After this, similar experiments were made with the oils of bergamot, chamomile, caraway, cloves, juniper, lemon, thyme, capivi, cubebs, etc., etc.

The numbers given in the following table are not valuable as showing the absolute relative absorption of oxygen by the various substances, as some were conducted in sunshine whilst others were not.

Body used.	c.c. Oxygen absorbed.	No. of days.	=daily.
			c.c.
Oil of caraway	18 (from oxygen)	6	3
" bergamot	12 "	4	3
" juniper	5 "	2	2·5
" cubebs	4 "	2	2
" lemon	16 "	13	1·2
Naphtha	25 "	33	·7
Oil of turpentine in sunshine (*a*)	220 "	6	36·6
" " " shade (*b*)	20 "	36	·6
" " " " (*c*)	10 (from air)	14	·75
" chamomile	6 (from oxygen)	·11	·55
Ether (absolute) (*a*)	6 5 "	34	.19
Ether (absolute) (*b*)	6·5 (from air)	34	.19

These bodies, which had thus absorbed known amounts of oxygen, were agitated after the experiment with a mixed solution of potassium iodide and starch, when they invariably developed the well-known blue coloration more or less quickly. It is remarkable that this coloration does not take place immediately, as one might suppose would be the case if these bodies contained dissolved ozone.

On the other hand, in the case of the bergamot above given, where 12 c.c. of oxygen had been absorbed, there was absolutely no coloration with the potassium iodide and starch for some minutes, but it then gradually became of an opaque blue. The same remark applies to the other cases for the most part.

Evidently, therefore, an agent now existed in these oxidized oils, having properties like those possessed by ozone.

This fact was confirmed by taking the various bodies and placing them in tubes, together with a solution of potassium iodide, covering the mouths of the tubes with paper, and exposing to diffused daylight. Ether, naphtha, and turpentine and caraway oils gave almost immediately a yellow line between the two layers, showing either that they precontained the active agent, or quickly produced it. Time was required in all the other cases, in all of which affirmative results were obtained and rendered very evident by the addition of a solution of starch. Confirmation of these results was further obtained by placing the substances in tubes heated to 70° C. by means of a steam-bath, and spreading over the mouth of the tubes paper soaked in the potassic iodide starch mixture. But the best results were obtained by mixing in watch-glasses the substance to be tried and the test-solution.

As the oils of turpentine and caraway were found to give the most decided reactions, most of the subsequent experiments were confined to them. These experiments, which are recorded at length in the original paper, led the author to the conclusion that the active agent produced in the oxidation of these oils, although possessing properties similar in many respects to ozone, is not ozone or peroxide of hydrogen, but an oxidized principle derived from terpene ($C_{10}H_{16}$), namely, a monohydrated oxide of turpentine ($C_{10}H_{16}O \cdot H_2O$). The evidence upon which this conclusion is based is thus summarized:

When oil of turpentine is exposed to air or oxygen, in presence of moisture, it oxidizes, producing an agent which resembles ozone and peroxide of hydrogen, inasmuch as it gives a similar reaction with

potassium iodide. It further resembles peroxide of hydrogen, because it gives a violet coloration with chromic acid solution acidulated with sulphuric acid. It cannot, however, be peroxide of hydrogen, because, although it is somewhat soluble in water, the solution retains its properties after long continued boiling. It again resembles the aforementioned bodies by being totally destroyed by peroxide of manganese, but it also differs from them by having much more stable properties, resisting, to a certain extent, the action of sodium hyposulphite, and temperatures considerably above the boiling-point of water. Although destroyed by peroxide of manganese and other agents, the body again forms on exposure to air and moisture.

Lastly, the active agent so like to ozone is destroyed at the boiling-point of oil of turpentine, viz., 160°, and temperatures at which ozone and peroxide of hydrogen are not destroyed, when chloride of zinc is present. It is also destroyed by other dehydrating agents and by certain deoxidizing agents.

It is increased in amount by heating to 100° in presence of water, but in the oil which distils over at that temperature, there is none of it. Simple exposure to air is, however, alone necessary for its formation, and then it has the same properties as the parent oil.

Oil of turpentine is generally credited with the power of ozonizing the air in its vicinity, as well as with the power of dissolving a certain amount of the ozone to which its oxidation is supposed to give rise. This is because it has long been known that potassic iodide test-paper exposed to its vapor speedily indicates the well-known reaction of ozone; but this must now be explained by the oil evaporating and oxidizing to this peculiar product, for the oil which has been subjected to the action of peroxide of manganese or chloride of zinc, or any of the other means which have been pointed out as efficient in destroying the active principle, no longer has the power of so influencing the air in its vicinity, until it has been allowed to stand in contact with air (and moisture?) for some time.

By experiments now in hand, the author hopes to be able to adduce more conclusive evidence as to the composition and constitution of the oxidized product of oil of turpentine, which possesses such interesting properties; also to show more precisely the circumstances under which it is produced, and to build it up synthetically from terpene or cymene, etc. For the present he can only hint at its

nature. His notion, as has already been stated, is, that it is $C_{10}H_{16}O \cdot H_2O$.

1. By the loss of H_2O_2 this becomes $C_{10}H_{16}$. Sulphuric acid causes, by its action upon the oxidized oil, the formation of a body which gives a violet coloration to chromic acid solution.

2. By the loss of $2H_2O$, the body becomes $C_{10}H_{14}$. Chloride of zinc destroys the active agent, and $C_{10}H_{14}$ (cymene) is a product of its action upon $C_{10}H_{16}O$.

3. By the loss of O it becomes $C_{10}H_{16} \cdot H_2O$. Deoxidizing bodies, as pyrogallate of potash, etc., also destroy the active agent. These data combine to show that the constitution of the body is as represented. It is also a fact that $C_{10}H_{16}O \cdot H_2O$ is somewhat soluble in water.—*Pharm. Journ. and Transactions, Aug.* 1, 1874.

CEYLON PRODUCTS.

In a description of Ceylon contained in the report of British Colonies at the Vienna Exhibition, prepared at the request of the British Commission, we find brief allusion to certain products of that Island which are of interest to the chemist and druggist. With regard to cinchona, we note that its cultivation in Ceylon was commenced about ten or eleven years ago. A number of young plants, carefully selected, were imported and set in the Botanical Gardens at Hakgala, at an elevation of about 6000 feet. The results, as an experiment, have been most satisfactory. The trees have already yielded a small supply of bark, which is said to have been valued in England at an exceedingly high rate. A large number of crossed species have been spontaneously developed, which, it is believed, will produce exceptionally fine bark. The coffee planters, too, have largely availed themselves of the gratuitous issue of young plants from the Government plantation, and have placed them in those positions on their estates which are unsuited for the growth of coffee. Sufficient success has been attained to justify sanguine hopes that an extended cultivation will be profitable, and that a large export business will spring up. The cultivation of vanilla does not appear to be very extensive, and no record can be found of the amount grown in or exported from, the colony. An excellent sample was sent to the Vienna Exhibition. Cinnamon is now exclusively and profitably grown, mainly in the neighborhood of Colombo, and is described as having somewhat the appearance, and being about the size, of the European laurel. Of late years, owing to the immense improvement in the preparation and cultivation of the spice, and to a largely increased demand at remunerative rates, there has been a much increased export from Ceylon, and there has been considerable

progress in the industry. The plant exhales no perfume, but the bruised leaf or bark has a powerful odor of the spice. By means of careful pruning, the plant can be made to grow the twigs or their branches free from knots, which yield what is called the pipe cinnamon, possessing a higher marketable value than sheet bark, which is peeled from the stem. The exportation of plumbago from Ceylon has also much increased during the past few years, and this is owing to the extensive European demand for crucibles. Crucibles made of plumbago, are said to have much greater power of resisting the high temperature employed in smelting than any other yet constructed. The raw material is found principally in underlying quartz in the south and southwest of Ceylon, and is worked by the natives under licenses from the Government. It is largely used in the preparation of what is called black-lead for polishing purposes; while a more recent application of it, and probably the most useful, is as a lubricant.—*Pharm. Journ. and Trans., July* 18, 1874.

Pharmaceutical Colleges and Associations.

The British Pharmaceutical Conference met, at its eleventh annual meeting, for the first time in London, convening at the Hall of the Pharmaceutical Society of Great Britain, 17 Bloomsbury Square on Wednesday, August 5, and terminating on Saturday, August 8, with an excursion down the valley of the Thames by train, and pleasure barges to Maidenhead. The result of this meeting is briefly stated in an editorial published in the *Pharmaceutical Journal* of August 8th, and from which we take the following synopsis:

"Whether for the number and quality of the papers, or the interesting discussions that have followed the reading of them, the meeting of 1874 has been a success, the only drawback having been that the number of members attending it have hardly equalled the hospitable hopes of the Local Committee. The interest with which the proceedings of the Conference are watched by pharmacists outside Great Britain was demonstrated by the presence of Dr. de Vrij, from the Hague, Colonel Forney and Mr. Dobbins from the United States, M. Adrian and M. Gallois from Paris, and Dr. Frazer and Professor Tichborne from Dublin.

"The Conversazione was attended by about three hundred and fifty gentlemen, who found ample occupation in examining the chemical, pharmaceutical, microscopical, botanical, and other articles in the exhibition, or in witnessing the demonstration by Mr. Davies of Mr. Crooke's experiments to show the attractive and repellant properties of light and radiant heat.

"On Thursday the General Meeting of the Conference auspiciously commenced by the announcement that five hundred members had been elected by the Executive Committee the previous day. The President's address was confined to topics of a political nature, and will doubtless obtain the careful consideration of all pharmacists, as containing the opinions of so experienced a leader of their body.

"The first paper was read by Dr. de Vrij, and described a new method of estimating the pharmaceutic value of cinchona barks, by which not only the

alkaloids, but also other active substances, particularly the cinchotannic acid, may be readily determined by the pharmacist himself. At the invitation of the President, Mr. Broughton contributed some important observations as to the state in which the alkaloids exist in the barks (viz., one-fifth quinate, four-fifths tannate), furnishing a key to the principle best applicable for their extraction. He also mentioned the practice in India, of employing the combined alkaloids. In the discussion which followed, Mr. Umney, and Mr. Giles criticized severely the liquid extract of Cinchona of the B. P., the former recommending percolation with proof spirit (product to contain 1 in 1).

"Prof. Flückiger contributed two papers: in one he reported that he had determined the deposit from essential oil of nutmegs, known generally as myristicon, to be really myristic acid; in the other he described the chemistry of elemi.

"Dr. de Vrij then gave the result of his experience of the anthelmintic virtues of pomegranate root-bark.

"It was appropriate that it should have fallen to the lot of the President to present the first of the reports of investigations, towards the expenses of which grants have been made by the Conference from the funds entrusted to it by Mr. Thomas Hyde Hills. The subject was a continuation of his researches upon the aconite bases. Mr. Groves having prepared specimens of the alkaloids, the determination of their chemical constitution was undertaken by Dr. C. R. A. Wright, who arrived at the conclusion that aconitia, pseudaconitia, and another body which Mr. Groves at first thought to be Mr. Broughton's atisine, are polymerides. Mr. Broughton has, however, since stated that he is certain that the body to which he has given the name of atisine is not of the same centesimal composition as aconitia, so that Mr. Groves' alkaloid may prove to be a fresh discovery.

"This report was followed by another that had been entrusted to Mr. A. W. Gerrard, on the official plasters, which was an able criticism of the present formula, and contained several suggestions for their improvement; Mr. Gerrard was also able to contribute to the information of many present by a dexterous demonstration of the art of plaster spreading.

"The use of oleic acid in pharmacy was the subject of a valuable paper by Professor Tichborne, in which he advocated the substitution of oleic acid for soap in the preparation of the liniments of the Pharmacopœia, and he illustrated his argument by the preparation of Linimentum Ammoniæ, Lin. Potassii Iodidi c. Sapone, Lin. Saponis, and Lin. Terebinthinæ. Objection was raised as to the difficulty of obtaining a sufficiently pure oleic acid, but Mr. Tichborne said that it could be obtained with facility, and even if this be not at present the case, there can be little doubt that a supply would follow the demand.

"Mr. Stoddart then described a modification of Liebig's process for the estimation of phosphoric acid, and afterwards practically exhibited the method of estimating the quality of milk recently suggested by Mr. Horsley, of Cheltenham, which consists in treating the milk in long tubes with ether and water by which means, the casein, salts and butter fat are separated in distinct layers. This process he also proposed to extend to the analysis of butter,

showing by experiment, that lard, for instance, in the cold, was not wholly soluble in ether, and therefore separated from the normal butter fat. The perfection of this test was, however, questioned, especially by Dr. Redwood, who, admitting that the test might detect a clumsy adulteration with lard or suet, was of opinion that there was no proof that it would expose a skilful admixture of fats more nearly approaching butter in its physical character.

"This concluded the business of the first day's meeting. In the evening, the members dined together at the Cannon Street Hotel

"On Friday, the first paper read was a 'Note on Cortex Rhamni Frangulæ," by Mr. H. C. Baildon. In continuation of his own and other previous remarks on this bark, Mr. Baildon urges the importance of selecting *good samples, i.e.*, corresponding to such a description as that of the German Pharmacopœia, and for administration he reccommends concentrated decoction (or liquid extract); also a concentrated tincture. The paper led to the expression of a considerable amount of personal testimony to the value of black alder bark as an aperient.

"Mr. Louis Siebold mentioned the important fact that the concentrated Liq. Ammon. Acetatis exerts a very evident solvent power on any lead which may be present in the glass vessel containing it, and suggested the propriety of keeping such solutions in bottles of Bohemian glass.

"In a 'Note on Scammony,' by Mr. T. Greenish, the use of the microscope was recommended in preference to iodine for examining starch present in scammony, to ascertain whether it was derived accidentally from the scammony root, or from wheat, etc.; the shapes of the granules, and especially of the hilum, being quite characteristic. He has found samples of *lump* virgin scammony invariably free from all starches, whilst every sample *in powder* as uniformly contained scammony starch, and some of them wheat starch in addition, which he attributes to the powder being prepared from the smaller fragments contained in cases of mixed qualities of the drug.

"Hydrocyanic acid furnished the topic of not less than four papers. Mr. Barnard S. Proctor recorded the results of some experiments having for their object the discovery of a process for extemporaneous preparations of official acid, and also of a solvent that would diminish the variation in strength dependent on evaporation. Of three solvents,—water, alcohol, and ether,—the latter he found to maintain most nearly its percentage of hydrocyanic acid. Two substitutes for the B. P. hydrocyanic acid were discussed by Mr. W. A. Shenstone, namely, the double cyanide of zinc and potassium proposed by Mr. Towerzey, and the hydrocyanic acid (one-tenth of B. P. strength), proposed by Dr. Tilden. Experiments by Mr. Shenstone indicates that acid of 0·2 per cent. suffers trifling (if any) loss from volatilization or decomposition. Mr. Shenstone also found solutions of the double cyanide perfectly stable. He did not, however, approve of its substitution for the B. P. preparation, but he thought the 0·2 per cent. acid would be legitimate. Mr. J. Williams stated that he had found that 20 per cent. of glycerin preserves acid up to the strength of about 5 per cent. This application of glycerin was suggested by the knowledge of its effectiveness in the case of solution of sulphuretted hydrogen.

"Mr. L. Siebold had found that a dilute acid 0·1 per cent. $\mathfrak{m}_{\mathfrak{l}}xx = \mathfrak{m}_{\mathfrak{l}}j$ B.P. does not deteriorate much in one month in an 8-oz, bottle in daily use; in unopened bottles it will keep at least three months. He also gave a useful caution to inexperienced chemists when estimating the strength of hydrocyanic acid by Liebig's (nitrate silver) method, that alkalinity to test paper is not necessarily an indication that sufficient alkali has been added.

"A contribution to the growing literature respecting the administration of phosphorus was made by Mr. Williams, who prefers for that purpose a solution in alcohol and glycerin, and is of opinion that many of the preparations used and supposed to contain a certain amount of phosphorus, would, if carefully examined, prove to contain it in a more or less oxidized condition.

"We must content ourselves with a bare enumeration of the other papers. Mr. Barton expressed a preference for the direct treatment of sarsaparilla root with spirit in larger proportion, in the preparation of extract. Mr. Haffenden contributed a paper on the confections of pharmacy; Mr. Muir on Potable Water, and its Contamination in House Cisterns, and Mr. Daniels on the Syrups of the Phosphates. Mr. H. Groves, of Florence, sent some interesting information respecting the medicinal plants in use among the Tuscans, and Mr. Hunt added to our knowledge of the pharmacy of the Flowery Land. Prof. C. R. A. Wright sent two papers; one 'on the Essential Oils of Wormwood, Citronella, and Cajeput,' and the other a continuation of his researches on the opium alkaloids. Mr. E. Smith suggested a method for the recovery of iodine from the waste in the preparation of iodoform. Mr. W. E. Heathfield sent some notes on the extracts of aconite, belladonna, hemlock, henbane and colchicum, and Mr. Schacht took the opportunity of explaining the scope of some experiments he is making to ascertain the relative proportions of conia present in the succus and extract of conium. The last paper read was by the President, and described his experience in the preparation of trimethylamin from the skate.

"Nothing now remained to be done but to pass the usual vote of thanks, to elect the officers, and decide the place of meeting for the ensueing year. It was resolved to meet at Bristol, and again under the presidency of Mr. T. B. Groves."

Pharmaceutical Society of Paris.—At the meeting held August 5th, M. Boudet presiding, M. P. Vigier proposed an argillaceous dressing for wounds, composed of 100 parts of fine humid clay and 50 parts of glycerin; the advantages claimed for it are that it adheres well to the skin, does not spoil and is readily washed off with water.

M. Guichard exhibited a dropping glass, constructed somewhat like that proposed by M. Lebaigue, but having a lateral aperature through which it may be completely emptied; the aperture is made of a size so that the drops of distilled water weigh five centigrams.

Fourth International Pharmaceutical Congress.—The pharmaceutical journals of England, France and Germany, as far as received up to the moment

when we are compelled to go to press, contain but meagre accounts of the transactions of this assemblage at St. Petersburg. The following has been culled from the different publications, and will, if possible, be followed, in our next issue, by a more extended account.

Besides the pharmacists of St. Petersburg, there were delegates present from Prague, two; Moscow, three; Riga, one; Odessa, one; Kasan, one; England, two; Austria, two; Denmark, two, and France, one. It will be observed that neither Norway, Sweden, Germany, Holland, Belgium, nor the States of Southern Europe, were represented. Mr. A. Von Waldheim (Vienna) was elected President, Messrs. Madson (Copenhagen) and Trapp (St. Petersburg) Vice-Presidents, and Messrs. Méhu (Paris), Sutton (London), Janauscheck (Prague), and Rennard (St. Petersburg), Secretaries. All the delegates, with the exception of those from England and France, speaking German with facility, that language was adopted as the "business language."

Questions 1, 2 and 4 were remitted to the consideration of Committees, while question 3 (see page 205 of our April number) was forthwith discussed and disposed of by the following resolution, adopted unanimously:

It is very desirable that the professorships of pharmacy should be held by pharmacists, and it is further desirable that, where circumstances will allow, there should be two chairs, one for materia medica and one for pharmaceutical chemistry.

The reports of the Committees were discussed at the second and third sessions and the opinion of the Congress expressed in resolutions, declaring—

Ad. 1. That the assistant should be held responsible for all errors committed by him in the laboratory or in the store; that the proprietor be responsible for the purity of the drugs, for the management of the business, and for the errors of his apprentices.

Ad. 2. That the inspection of pharmacies should be conducted by two experts qualified by the State; one of whom, who has to examine the medicaments and the general business management, should be an apothecary, actively engaged in business; and that it is desirable that he should be elected by the apothecaries.

Ad. 4. The Universal Pharmacopœia presented by Dr. Méhu in the name of the Paris Pharmaceutical Society, was referred to a Committee, charged with examining the same and then sending it to all pharmaceutical societies for examination and report.

The place of meeting of the fifth Congress, for which Philadelphia and London have been proposed, has not yet been determined on.

Editorial Department.

The Twenty-second Annual Meeting of the American Pharmaceutical Association, of the Proceedings of which we give a full account elsewhere, has been quite successful, in point of numbers as well as in regard to the papers

read there. The attendance from the Atlantic States has been larger than was at first anticipated, in consequence of the refusal of the great trunk railroad lines to grant a reduction of fare. But several cities and sections, from which a goodly number of members had been expected, were but slimly or not at all represented. This may be in part accounted for by the depression of business during the last year, and also, to some extent, by the industrial and agricultural expositions which were open at that time in four or five of the Western cities. The Southern States, as usual, had sent but few representatives, owing to the sickness usually prevailing in many places during the early part of September. It is to be regretted that there does not appear to be any period of the year, which would suit nearly all the pharmacists in different parts of the country equally well, for leaving their business to attend these important gatherings, exchange views with their brethren from other localities, and enjoy some recreation from the confining labors during the past year. In some, perhaps in many instances, our friends might well afford to cut loose about this time from the daily routine of business, with the view of assisting in the work before the Association, and forming or renewing an acquaintance or friendship with their *confrères* from distant places.

According to the programme, as published on page 395 of this Journal, over forty members, including ladies, left Baltimore and Washington on the morning of Saturday, September 5th, a portion of them going as far as Deer Park, situated upon the summit plateau of Big Savage Mountain, while another portion went to Grafton, with its picturesque surroundings, and still another portion visited Marietta, to examine the mounds, erected there, as in some other Western localities, by a pre-historic race. The majority of these parties, reenforced by other members, arrived together in Cincinnati, received the kind attentions of some of their fellow-members, and proceeded to Louisville, where the pharmacists and druggists had made preparations for their comfort and entertainment.

A promenade concert and hop was given in honor of the Association, in the upper concert room of Liederkranz Hall, on Wednesday evening, September 9th. The visiting ladies were invited to a drive through the city, and the most interesting points in the neighborhood, on Thursday afternoon. Friday afternoon was set apart for a visit to the Star Plate Glass Works, New Albany, Ind., the only works in the United States making polished plate glass. On Friday evening the members called upon Prof. J. Lawrence Smith, and spent a pleasant and profitable hour in examining his handsome and well-appointed laboratory and fine collections, and in conversation with prominent citizens and savans of Louisville. The invitation of the Liederkranz Society for this evening was likewise taken advantage of by many members and their ladies, who visited Woodland Garden to enjoy the vocal and instrumental concert, many remaining to participate in the dancing, which was kept up for some hours.

At almost all hours of the day and evening members and their ladies could be seen at the Industrial Exposition, generously opened to them free of charge by the managers. The badges, which for the first time had been provided for the attendants at this meeting, served not merely for the members to recognize

each other, but they were likewise the means of opening many places of interest which would have otherwise been accessible with difficulty.

About seventy-five members, including the ladies, participated in the excursion to Mammoth Cave, for which round trip tickets had been secured at $5.50, besides a reduction of 25 per cent. from the board and the entrance fee at the Cave. We have been informed by Col. Miller, the Superintendent of the Cave, that, with the exception of a party of eighty-four, consisting of students accompanied by their professors, this party of the American Pharmaceutical Association was the largest one that has visited this subterranean wonder. Sixty-six persons entered Mammoth Cave on Saturday, Sept. 12th, and, passing over the short route, visited Gorin's dome, the bottomless pit, the giant's coffin, the star chamber, &c., spending four to five hours in the Cave. On the following day, sixty of the party travelled over the long route, remaining under ground between ten and eleven hours, passing through Fat man's misery crossing the river Styx, lake Lethe, and, by boats, Echo river, climbing the Rocky mountains to take a look at the Dismal Hollow, and, at the end of the Cave, viewing the Maelstrom at the bottom of a pit one hundred and ninety feet deep. The grandeur of these subterranean corridors and rotundas, with their hanging and fallen rocks, their ancient now dry water-courses, their still rivers and ponds, their monotonous cascades, their innumerable stalactites and stalagmites of all conceivable forms, their quietness and impenetrable darkness, their eyeless fish and crawfish, is beyond description, and well repaid the long journey.

On the homeward trip from the Mammoth Cave the party scattered, doubtless well pleased with Louisville, the beautiful "City of the Falls," and the hospitality of which they had been the recipients. The twenty-second meeting of the American Pharmaceutical Association is over, and the work for the twenty-third meeting, in Boston, must soon commence.

Notes on the Pharmaceutical Exhibition of Louisville.—The following from the pen of Dr. A. W. Miller, contains so many timely suggestions and observations, that we prefer to give his "notes" in place of enumerating to our readers the articles which were placed on exhibition.

In accordance with the programme of the Local Secretary, the lower hall of the Liederkranz building had been specially arranged and decorated for this display. The room was peculiarly well suited for the purpose, as it was handsomely fitted up, and possessed sufficient altitude, an ample amount of space and an abundance of light. Being situated in the rear of the building, the disagreeable dust and unharmonious noise of the street were alike avoided. The local committee had been untiring in their efforts to assist the exhibitors by all means in their power. Prof. Scheffer, in particular, earned the sincere thanks of many of the representatives of Eastern houses.

The numerous Industrial Expositions of the West usually present at one glance so many heterogeneous elements, which bear no particular relation to each other, and which are but imperfectly classified, that the general effect becomes quite confusing, if not actually painful. In this respect the Pharma-

ceutical Exhibition furnished an agreeable contrast by its chaste and tasteful arrangements, which materially facilitated the convenient inspection or careful study of all the various articles exposed. There was just a sufficient number of goods displayed to fill the room comfortably, without in the least crowding or overloading it. A fine floral collection of ornamental foliage plants in the centre of the room contributed in no small degree to the production of a very elegant and effective *tout ensemble*.

Perhaps the most noteworthy demerit of the last exhibition was the paucity of novelties in all its various branches. Our leading manufacturers appear to content themselves with showing nearly the same line of their goods year after year, with very trifling variations. We would suggest to these to vary their routine by exhibiting models of apparatus used in making any of their chemicals, together with samples of the crude drugs and their subsequent stages of manufacture. The actual production of a single important chemical in the exhibition hall would be very sure to attract infinite more attention than the most lavish and elaborate display of finished products.

The Louisville druggists deserve considerable credit for the exhibition of three important living botanical specimens, namely, the *Eucalyptus globulus* of Australia, the Chinese Ramie plant, *Boehmeria tenacissima*, which furnishes a valuable textile fibre, and the *Sesamum orientale* or Benne plant.

According to the decision of the local journals, Messrs. G. Mallinckrodt & Co., of St. Louis, made the finest display of chemicals in over 200 varieties. The most prominent object of admiration was a magnificent specimen of purified metallic bismuth, which afforded an excellent opportunity of studying the very peculiar crystalline form of this metal. Most of the crystals were rhombohedra arranged like inverted terraces in the manner of a square amphitheatre, but a few of them consisted of concentric rectangles, resembling the pattern known among ladies as the walls of Troy.

Messrs. McKesson & Robbins had sent along with their other goods an herbarium of 104 specimens, comprising the greater portion of the German officinal plants, which were very neatly mounted, and furnished with printed labels, giving their pharmaceutical, botanical and German names, and also designating the officinal portion and the flowering season. The representative of the house stated that a number of these herbaria had been specially imported for sale, and that they were offered at the reasonable rate of twelve dollars each. The idea seems to be a praiseworthy one, for obvious reasons; and we trust that it may prove to be an incentive to some of our American herbalists to prepare for sale, at moderate figures, complete herbaria of plants officinal in our own Pharmacopœia. It would be difficult for admiring lady friends to find more suitable presents than these for our graduates in pharmacy on the eventful commencement day. Certainly, every pharmacist, who makes any claim to thorough knowledge of his profession, should own such a collection.

Guarana, in rolls and powder, was exhibited. Also, gurjun balsam or oil, which resembles copaiba in appearance and consistence; the article on exhibition was possessed of an intensely disgusting odor, recalling that of putrefying cabbage.

Although patent and proprietary articles are excluded by the rules of the Association, we noticed quite an assortment of French preparations, which virtually belong to the same class. These were, however, excluded from future exhibitions, by a special resolution of the meeting.

The class of elixirs, which appear to be on the wane, was less numerously represented than formerly.

Wines and liquors were offered by a few firms in great variety. During a discussion on the subject of their exhibition and sampling, considerable disapprobation was expressed by a large number of the members present.

Messrs. B. O. & G. C. Wilson made their usual elaborate display of superbly dried herbs, flowers, etc. The entire assortment was presented by them to the Louisville College of Pharmacy, and must prove to be a desirable acquisition. We were greatly pleased with the accuracy and correctness of their labels—a subject on which so many of our other friends were deficient.

Since the close of the meeting, we have incidentally ascertained that one of our Cincinnati members is the fortunate owner of a valuable collection of Chinese drugs. While we regret exceedingly that we were not favored with the privilege of inspecting these in Louisville, we would respectfully call upon him to oblige us with their exhibition next year, in Boston, and to give us the benefit of whatever information he may have been able to collate concerning them by that period.

Bogus Pharmaceutical Diplomas.—We have, on several occasions, called attention to the traffic in bogus medical and other diplomas, which is carried on from Philadelphia, and which, notwithstanding the repeated exposures in this country and Europe, appears to be still in a very flourishing condition, numerous simpletons being found who are willing to expend their money in obtaining cheap honors. It is for the first time that we have learned that, from the same concern, pharmaceutical diplomas may be obtained on the same favorable terms, as the following letter, which was received at the office of the Mayor of Philadelphia, Sept. 24th, will show:

"Malaga, September 4th, 1874.

"*Hon. Mr. Stokley, Mayor of Philadelphia:*

"Sir,—I have in my possession two letters from Jersey, England, by a person styling himself 'Dr.' P. F. A. Van Der Vyver, to Mr. Manuel Perez, of this city, enclosing to him what purports to be a circular (printed) of 'The American University of Philadelphia, No. 514 Pine street ('*La Universidad de Fi'adelfia Amerique*') and offering for the sum of eight hundred pesetas, equivalent to $160 in American gold, to furnish a Diploma in Pharmacy of said University to the son of Mr. Perez, without the necessity of *his leaving Malaga.* And in a letter of the said 'Dr.' Van der Vyver, dated July 13th, 1874, he says he has sold and delivered to many persons in Spain and Portugal diplomas of the said 'University,' and they proved satisfactory.

"I have the pleasure, at the request of Mr. Perez, to invite your attention to this matter, and to request, if agreeable to you, that you communicate to me

the result of such investigations as you may cause to be made, and the character of the persons connected with this 'University.'

"I am, Sir, your obedient servant,

"A. M. Hancock, U. S. Consul."

A reply was sent, informing the Consul of the standing of the establishment referred to, and of the legal proceedings now pending against it. We have informed our readers of the latter just one year ago (see *Amer. Journ. Pharm.*, 1873, p. 476). Justice is proverbially slow; let us hope that it will be equally sure.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Gmelin-Kraut's Handbuch der Chemie, Anorganische Chemie. Sechste umgearbeitete Auflage. Heidelberg: Carl Winter's Universitäts-Buchhandlung.

We have just received, after considerable delay, numbers nine and ten of the third volume of this work, which bear the date 1873. The following has been published until now: Part I of Vol. I (numbers one, two and three), treating of general and physical chemistry, by Prof. A. Naumann; Part II of Vol. I (eight numbers), containing the non-metallic elements, by Profs. H. Ritter, of Hioga, Japan, and Carl Kraut, of Hannover; and Vol. III (ten numbers), by Prof. S. M. Jörgensen, of Copenhagen. This volume contains, as far as it has appeared, the metals, zinc, cadmium, tin, thallium, lead, iron, cobalt, nickel, copper and mercury. Every number sustains the opinion formed of the new edition of this great work on the appearance of the first few numbers (see *Amer. Journ. Pharm.*, 1872, January, p. 43). To those of our readers who are not yet in possession of Gmelin's Organic Chemistry, it will be welcome news to learn that the latest (fourth) German edition of it will be supplied by the publishers, until further notice, at the considerably reduced price of twenty-five thalers.

The Physiology of Man; designed to represent the existing state of physiolygical science, as applied to the functions of the human body. By Austin Flint, Jr., M. D., Professor of Physiology and Physiological Anatomy in the Bellevue Hospital Medical College, New York, etc. In five volumes. Vol. V. (with a general index to the five volumes) Special Senses; Generation. New York: D. Appleton & Co., 1874. Price, cloth $4.50; sheep $5.50.

This is the concluding volume of a work to which the author has devoted eleven years of study and research, and of which the preceding volumes have received the praise which is due to the careful experimenter, the close observer and the profound student. The volume before us bears the same characteristics of excellence in the judicious arrangement of the material, the clear and concise language, and the absence of unprofitable speculations. The author may verily indulge the hope "that he has written a book which may assist his fellow-workers, and interest not only the student and practitioner of medicine, but some others who desire to keep pace with the progress of natural science."

The first ten chapters of the volume are devoted to the special senses, of which *touch* and *smell* are treated in chapters I and II. The following four chapters treat of *vision* and the anatomy and physiology of the eye; then follow three chapters on *hearing*, the anatomy and functions of the auditory apparatus; and the tenth chapter, on the sense of *taste*, closes the first part of this volume.

The second part treats in nine chapters of generation, the organs and elements of generation, fecundation, embryonic development, development after birth, and death.

Not the least commendable portion of this volume is the exhaustive general index to the five volumes of the work.

Proceedings of the American Academy of Arts and Sciences. New Series Vol. I. (Whole Series Vol. IX.) From May, 1873, to May, 1874. Selected from the records. Boston: Press of John Wilson & Son, 1974. 8vo. pp. 367.

The following papers of this volume are particularly interesting to our readers: Notes on Compositæ and Characters of Certain Genera and Species, by Asa Gray. It is a continuation and conclusion of a paper by the same author published in the preceding volume and refers principally to the Californian species. A Revision of the North American Chenopodiaceæ by Sereno Watson—very interesting and important to the botanical student. Report of the Committee appointed to Memorialize the Legislature of the State of Massachusetts on the subject of Expert Testimony, by Emory Washburn. It is to be regretted that the Legislature did not adopt the suggestions of the Committee, according to which experts are to be appointed by the courts; such a course would certainly mark the beginning of a most necessary reform. A Singular Case of Corrosion of a Tin Tank, by S. P. Sharpless. It relates to the destruction of the block-tin lining of the water tank in the hotel at Collinsville, Conn.

Cocain, Veratria and Gelsemium. Toxicological Studies, by I. Ott, Easton, Pa. Philadelphia: Lindsay & Blakiston. 1874. pp. 66.

This contains descriptions of experiments, made with the articles named, upon rabbits, cats and dogs, also upon man, and from which the author concludes that coca and cocaina should be placed in the category of excitants, of which coffee is the chief example, and that coca increases the pulse and temperature, and dilates the pupil. In regard to veratria, it is inferred that the nerve does not participate in the prolongation of muscular contraction by that poison. Gelsemium is a respiratory poison, dilates the pupil and gradually depresses the temptrature.

On Strain and Over-action of the Heart. By J. M. DaCosta, M.D., Professor of Practice of Medicine in Jefferson Medical College, Philadelphia. Washington: Smithsonian Institution. 1874. 8vo, pp. 28.

This is the third of the "Toner Lectures," which have been instituted by Joseph M. Toner, M. D., who has placed in charge of a Board of Trustees,

consisting of the Secretary of the Smithsonian Institution, the Surgeon-Generals of the United States Army and Navy, and the President of the Medical Society of the District of Columbia, a fund, the interest of which is to be applied for at least two annual memoirs or essays relative to some branch of medical science, and containing some new truth fully established by experiment or observation. These lectures are published by the Smithsonian Institution in its "Miscellaneous Collections."

Address of Joseph M. Turner, M. D. Philadelphia: Collins, Printer. 1874. 8vo, pp. 20.

This is the annual address of the President of the American Medical Association, and was delivered at the meeting, held in Detroit, Mich., in May last.

Bulletin of the Bussey Institution (Jamaica Plain, Boston). Cambridge: University Press. 1874. 8vo, pp 80.

The pamphlet gives a historical sketch of this institution, which was established under the trusts created by the will of Benj. Bussey, of Roxbury, Mass., bearing date July 30th, 1835. The following papers are contained in the publication before us: By Prof. D. D. Slade, on the humane destruction of animals; and, by Prof. F. H. Storer, Results obtained on examining some commercial fertilizers by way of analysis; Results obtained on analyzing several samples of "shorts" and "middlings," with remarks on the average composition of bran; on the agricultural value of the ashes of anthracite; and a portion of a Record of Trials of various Fertilizers.

Transactions of the Michigan State Medical Society for the Year 1874. Series II, Vol. VI. Lansing: W. S. George & Co., 1874. 8vo, pp. 269.

It contains the minutes, addresses and reports read at the eighth annual meeting, held at Coldwater May 6th.

Essentials of the Principles and Practice of Medicine. A handbook for students and practitioners. By Henry Hartshorne, A. M., M. D., Professor of Hygiene in the University of Pennsylvania, &c. Fourth edition, thoroughly revised, with 100 illustrations. Philadelphia: Henry C. Lea, 1874. 12mo, pp. 548.

We have noticed the third edition of this work, three years ago (see *Amer. Journ. Pharm*, 1871, Nov., p. 527). The necessity of a new edition after so short a time is a sufficient guarantee of its usefulness. The general plan of the work has been partially modified, so as to embody the most important suggestions, as well as results of observations, presented in recent medical literature. For the first time, illustrations appear in this edition; they have been chosen with the view of elucidating a number of subjects of special importance and interest.